

**WHAT IS CLAIMED IS:**

1                    1. A laminated ultrasonic waveguide comprising at least two stamped  
2 pieces of sheet stock which are laminated together to form a laminated ultrasonic  
3 waveguide for transferring ultrasonic acoustic energy along a longitudinal axis of the  
4 laminated ultrasonic waveguide.

1                    2. The laminated ultrasonic waveguide of claim 1, in an ultrasonic  
2 surgical instrument having an active tip end-effector which is placed in contact with  
3 tissue of a patient to couple ultrasonic energy transferred along the laminated  
4 ultrasonic waveguide to the tissue.

1                    3. The laminated ultrasonic waveguide of claim 1, wherein the at least  
2 two stamped pieces of sheet stock are stamped to form at least one channel extending  
3 along the length of the laminated ultrasonic waveguide.

1                    4. The laminated ultrasonic waveguide of claim 1, wherein the  
2 laminated ultrasonic waveguide defines a connector at a proximal end of the laminated  
3 ultrasonic waveguide to transfer ultrasonic energy to the laminated ultrasonic  
4 waveguide.

1                    5. The laminated ultrasonic waveguide of claim 1, comprising first and  
2 second stamped half pieces of sheet stock which are laminated together, wherein each  
3 of the stamped first and second half pieces of sheet stock defines half of a cylindrical  
4 connector at a proximal end of the laminated ultrasonic waveguide which has threads  
5 stamped into an interior surface of each half cylindrical connector, such that the first  
6 and second half pieces define a cylindrical connector having threads on the interior  
7 surface thereof for providing a threaded connector to the laminated ultrasonic  
8 waveguide.

1                    6. The laminated ultrasonic waveguide of claim 1, wherein a distal  
2 portion of each of the stamped pieces of sheet stock has a longitudinal rib stamped

3 therein extending along the longitudinal axis of the laminated ultrasonic waveguide to  
4 provide lateral stiffness for the laminated ultrasonic waveguide.

1                7. The laminated ultrasonic waveguide of claim 1, wherein the  
2 ultrasonic waveguide comprises first outer, second inner and third outer stamped  
3 pieces of sheet stock which are laminated together, wherein each of the first, second  
4 and third stamped pieces of sheet stock defines a portion of a cylindrical connector at a  
5 proximal end of the laminated ultrasonic waveguide which has threads stamped into  
6 an interior surface of the cylindrical connector, such that the first, second and third  
7 stamped pieces define the cylindrical connector having threads stamped into the  
8 interior surface of the cylindrical connector for providing a threaded connector to the  
9 laminated ultrasonic waveguide.

1                8. The laminated ultrasonic waveguide of claim 7, wherein the first  
2 and third outer laminated pieces of sheet stock extend from the proximal end of the  
3 ultrasonic waveguide for a portion of the length of the ultrasonic waveguide, and the  
4 second inner laminated piece of sheet stock extends for at least a portion of the length  
5 of the ultrasonic waveguide.

1                9. The laminated ultrasonic waveguide of claim 8, wherein the second  
2 inner laminated piece of sheet stock extends to a distal active tip end of the laminated  
3 ultrasonic waveguide.

1                10. The laminated ultrasonic waveguide of claim 9, wherein the second  
2 inner laminated piece forms an end-effector at the distal end of the ultrasonic  
3 laminated waveguide.

1                11. The ultrasonic waveguide of claim 1, wherein a piece of sheet  
2 stock is mounted and secured to longitudinally extending slots in an outer  
3 circumference of a separate threaded connector.

1 12. A method of fabricating a laminated ultrasonic waveguide  
2 comprising stamping and forming at least two stamped pieces of sheet stock to form  
3 parts of the body of the laminated ultrasonic waveguide, and laminating together the at  
4 least two stamped pieces of sheet stock to form the body of the laminated ultrasonic  
5 waveguide.

1 13. The method of claim 12, further comprising fabricating an  
2 ultrasonic surgical instrument comprising an active tip end-effector which is placed in  
3 contact with tissue of a patient to couple ultrasonic energy transferred along the  
4 longitudinal axis of the laminated ultrasonic waveguide to the tissue.

1 14. The method of claim 12, including stamping the at least two  
2 stamped pieces of sheet stock to form at least one channel extending along a length of  
3 the laminated ultrasonic waveguide.

1 15. The method of claim 12, further comprising defining a connector at  
2 a proximal end of the laminated ultrasonic waveguide to transfer ultrasonic energy to  
3 the laminated ultrasonic waveguide.

1 16. The method of claim 12, including stamping and forming first and  
2 second half pieces of sheet stock while defining in each of the stamped first and  
3 second half pieces of sheet stock half of a cylindrical connector at a proximal end of  
4 the laminated ultrasonic waveguide by stamping threads into an interior surface of  
5 each half of the cylindrical connector, such that the first and second half pieces define  
6 a cylindrical connector having threads on the interior surface thereof for providing a  
7 threaded connector to the laminated ultrasonic waveguide.

1 17. The method of claim 12, including stamping and forming a  
2 longitudinal rib in a distal portion of each of the stamped pieces of sheet stock which  
3 extends along a longitudinal axis of the laminated ultrasonic waveguide to provide  
4 lateral stiffness for the laminated ultrasonic waveguide.

1                   18. The method of claim 12, including stamping and forming first  
2 outer , second inner and third outer stamped pieces of sheet stock while defining in  
3 each of the first, second and third stamped pieces of sheet metal a portion of a  
4 cylindrical connector at a proximal end of the laminated ultrasonic waveguide by  
5 stamping threads into an interior surface of the cylindrical connector, such that the  
6 first, second and third stamped pieces define the cylindrical connector having threads  
7 stamped into the interior surface of the cylindrical connector for providing a threaded  
8 connector to the ultrasonic waveguide.

1                   19. The method of fabricating an ultrasonic surgical instrument of  
2 claim 17, including stamping and forming the first and third outer laminated pieces of  
3 sheet stock to extend from the proximal end of the laminated ultrasonic waveguide for  
4 a portion of the length of the laminated ultrasonic waveguide, and stamping and  
5 forming the second inner laminated piece of sheet stock to extend for at least a portion  
6 of the length of the laminated ultrasonic waveguide.

1                   20. The method of claim 19, including forming the second inner  
2 laminated piece of sheet stock to extend to a distal tip end of the laminated ultrasonic  
3 waveguide.

1                   21. The method of claim 20, including stamping and forming the  
2 second inner laminated piece with an end-effector tip at the distal end of the laminated  
3 ultrasonic waveguide.

1                   22. The method of claim 12, including mounting and securing a piece  
2 of sheet stock to longitudinally extending slots in an outer circumference of a separate  
3 threaded connector.